A MORE EXPLICIT FRAMEWORK FOR EVALUATING OBJECTIVITY AND (INTER)SUBJECTIVITY IN MODALITY DOMAIN[1]

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Abstract
In this paper we propose a more explicit framework for definition and evaluation of objectivity and (inter)subjectivity in the modality domain. In the proposed operational framework, we make a basic distinction between the modality notions that serve an ideational function (i.e., dynamic modal notions) and those with an interpersonal function (i.e., deontic and epistemic evaluations). The modality notions with ideational and interpersonal functions are content and person-oriented, respectively. While all dynamic modal notions are characterized by objectivity, deontic and epistemic modal notions may display a degree of (inter)subjectivity depending on their embedding context. Our main claim is that (inter)subjectivity can hardly be argued to be the inherent property of certain modality forms and types, but rather it is essentially a contextual effect. We functionally-operationally define (inter)subjectivity as the degree of sharedness an evaluator attributes to an epistemic/deontic evaluation and its related evidence/deontic source. (Inter)subjectivity is realized by (at least) one or a combination of three contextual factors, viz. the embedding syntactic pattern, the linguistic context and the extralinguistic context of a modality marker. Since both descriptive and performative modal evaluations involve a degree of (inter)subjectivity, performativity, which refers to speaker's current commitment to his evaluation, is viewed as an independent dimension within modal evaluations and plays no part in the expression of (inter)subjectivity.

Keywords: modality, objectivity, (inter)subjectivity, performativity

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1. Introduction

The semantic category of subjectivity is one of the most elusive categories for linguists to account for. The difficulty of its investigation is to the extent that it has led Narrog (2012: 2) to admit that "[t]he very concept of subjectivity seems to contradict the idea of linguistics as a scientific enterprise, and to elude objective study." The expression and investigation of subjectivity is not something new. Bréal, (1897) views "subjective element" of language as its "most ancient part." According to Bally (1965: 36), a sentence is necessarily composed of a "representative" (i.e., propositional) part and encoding of a "thinking subject." Similarly, to Benveniste (1971: 225) "language is marked so deeply by the expression of subjectivity that one might ask if it could still function and be called language if it were constructed otherwise."

Subjectivity is more often than not linked to speaker-relatedness or speaker's presence in the use of language. To Lyons (1977: 739) subjectivity is realized in language when a language user "comments upon [an] utterance and expresses his attitude to what he is saying". More precisely, he (1995: 337) states that subjectivity "denotes the property […] of being either a subject of consciousness […] or a subject of action (an agent)". To De Smet and Verstraete "subjectivity has to do with idea that a certain "linguistic element or construction requires reference to the speaker in its interpretation" (2006: 365). For example, they explain that in (1a) *won't* encodes a subject-internal property (i.e., *Mum*'s unwillingness) and that there is no need for reference to the speaker for its interpretation. Conversely, in (1b) *won't* encodes a speaker-related epistemic evaluation of the state of affairs (SoAs).

(1)

      a. Mum won't let us go out tonight. I asked her but she said we had partied more than enough this week.
      b. Judith won't be late. She never is. (2006: 367).

In the same vein, Traugott (2010: 32) views subjectivity as "the prime semantic or pragmatic meaning which is to index speaker attitude or viewpoint". Finally, House (2012: 140) views subjectivity as part of speaker's act of projecting his attitude into discourse.

There are two approaches to subjectivity which we will put aside in this paper, viz. the *conceptualist notions of subjectivity* and *subjectification*. These views are incompatible with the other views, since, for one thing, they were developed within totally different theoretical frameworks, as Nuyts (2012: 54-55) argues.[2] Subjectification refers to the process through which some linguistic elements, especially the grammaticalizing ones (e.g., the modal auxiliary verbs) develop new speaker-related senses (Traugott and Dasher, 2002). The development of

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2   See Narrog (2012) for a comprehensive overview of these approaches.

epistemic meaning in some (originally non-epistemic) English modal auxiliaries is a concrete example of subjectification (see Traugott 1995 and Traugott and Konig 1991). The conceptualist approach to subjectivity has mainly been developed by Langacker (1991 and 2002) within Cognitive Grammar framework. There is a little overlap between this view of subjectivity and what is generally and intuitively thought of the term. According to Nuyts (2012) the fact that the same terminology has been employed to refer to the different phenomena that these approaches discuss seems to be a coincidence only.

A considerable amount of investigation has already been conducted on the subjectivity dimension but an explicit framework for its operational definition and evaluation is still missing, especially in the modality domain which has often been associated with the expression of subjectivity. The lack of such a framework has very recently been noticed by Depraetere (2016). She bemoans that most accounts of subjectivity in modality are "basically introspective intuitions" and that "clear definitions or indications as to how to operationalize the parameter of subjectivity are often lacking" (2016: 380). Thus, the main concern of this paper is to propose an operational framework for the definition and more 'objective' evaluation of this ever-elusive category in the modality sphere.

The organization of the paper is as follows. In section 2, after going over Lyons's (1977, 1995) traditional conception of sub/objectivity in modality, we will critically review those subjectivity accounts that have linked subjectivity in the modality domain to certain modal *types* and those that have associated it with certain modal *forms*. Section 3 will deal with those proposals that view subjectivity as a contextual effect. In section 4, we propose our system for the functional definition and operational evaluation of (inter)subjectivity and objectivity dimensions and apply it to some forms and types of English modality domain. Section 5 provides a short summary of the paper.

2. Subjectivity in the modality domain

Linguists have paid a lot of attention to subjectivity in modality sphere, in general, and in modal auxiliary verbs, in particular. In addition, modality (especially, epistemic modality) and subjectivity have often been associated with each other. For example, to Narrog (2012: 2) they share two things: (a) both are difficult to define and capture and (b) they are associated with one another. Depraetere (2016: 378) states that subjectivity "plays a major role in the characterization of modal meaning". As it was Lyons (1977) who introduced the terminological distinction between subjective and its notional counterpart objective modality, every discussion of the matter owes a debt to his conception of the matter. Lyons portrays his view of the subjective/objective distinction via the double interpretation of epistemic use of may in the often quoted (2).

(2)
　　　　Alfred may be unmarried (Lyons 1977: 797).

According to Lyons, in its subjective construal *may* in (2) encodes the speaker's pure epistemic uncertainty (or guess) regarding the truth of the underlying proposition, while under an objective construal, it expresses "a quantifiable possibility" that *Alfred is unmarried* (1977: 797). For example, *may* is construed as objective when the speaker literally knows that *Alfred* is a member of a circle of people half of whom are single. Thus, in this situation there is at least a 50% chance that *Alfred is unmarried*. In other words, to Lyons objective epistemic modality does not indicate that the speaker merely *believes* in the possibility/necessity of a proposition, but rather signals that he mathematically *knows* about its possibility/necessity (1977: 798). Lyons' conception of subjectivity includes two main parameters which have been repeatedly discussed in the later accounts of subjectivity (e.g., Verstraete, 2001; Nuyts 2001a and b, 2012; Narrog, 2012, to name just a few): (a) subjective modal notions are *performative*, that is, they encode speaker's *current* commitment to what he says and (b) they involve an indication of *quality of evidence* for making a modal judgement, that is, the evidentiality dimension (see Nuyts 2001b). To Lyons subjectivity is more basic than objectivity in natural language (1977: 805; 1995: 330) and objective modality lies somewhere between subjective and alethic modality (1977: 798).[3] In addition, the distinction between objective epistemic modality and alethic (or logical) modality is blurred, because both have to do with encoding the notion of "logical probability" (1977: 797).

　　As Lyons' double interpretation of *may* in (2) suggests, he is certainly of the opinion that sub/objectivity is not the inherent property of modality markers (at least modal auxiliaries), but rather it is an extra meaning component which the speaker pragmatically adds to the modal evaluation in the context (1995: 340). Although Lyons' approach to sub/objectivity in the modal auxiliaries domain appears to be fairly pragmatic, he associates some modal forms with expression of sub/objectivity. For instance, apparently, to him epistemic modal adverbs are inherently subjective since he paraphrases the subjective construal of *may* in (2) through (3).

(3)
　　　　Perhaps Alfred is unmarried. (1977: 798).

2.1. sub/objectivity as an inherent property of certain modality types

Some works associate sub/objectivity with certain modality types, that is, they view certain types of modality (e.g., deontic, dynamic or epistemic) as

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[3]　Alethic modality is employed in logic. For example, m*ust* in *five plus five must be ten* expresses alethic modality (rather than epistemic modality).

intrinsically subjective or objective. In this section we critically review some of the works which have gone down this path.

Halliday (1970) is the first scholar who explicitly links speaker-relatedness and content-relatedness to certain modality types. To him English modal auxiliaries can serve two functions: interpersonal (speaker-related) and ideational (content-related). In his view, epistemic modal notions contribute to the interpersonal component of language in that they expresses "a form of participation by the speaker in the speech event" and thus they are subjective (1977: 335). Some of the deontic uses of the modals are, also, speaker-related and belong to the interpersonal functional component of language. In contrast, dynamic modal notions (which to him are ability and volition) and some deontic uses of the modal auxiliaries serve an ideational function since they do not encode "speaker's comments, but form part of the content of the clause" (1970: 338). [4]

Coates (1983) associates subjectivity with performativity in modality domain. In her corpus-based investigation of English modal auxiliaries, Coates identifies both objectively and subjectively used epistemic and non-epistemic (root) modals. To Coates (1983: 20) subjectivity (or speaker-relatedness) is the defining feature of epistemic senses of modal auxiliaries. However, she admits that there are some 'peripheral' objective uses, too. She explains that in the epistemic realm subjective uses of epistemic modal auxiliaries encode speaker's current commitment to the truth of what he says (i.e., they are performative), while objective epistemic modals merely encode a logical statement in which the speaker is not involved (i.e., they are non- performative). Her view of objectivity bears a close similarity to of alethic modality. It should be noted that Coates does not view subjectivity and objectivity as two opposite notions, but rather sees a as a cline between the two. It means that, to her, modal auxiliaries express more or less subjective/objective modal notions (1983: 34). As an illustration of the cline between objectivity and subjectivity, she distinguishes between subjective and objective use of epistemic *must* in the following terms:

> The cline associated with logical necessity extends from a subjective core, meaning 'I confidently infer that X', to an objective periphery meaning 'In the light of what is known, it is necessarily the case that x. (Coates 1983: 42)

To Foley and Van Valin (1984) both deontic and dynamic use of modal auxiliaries are objective (content-related or ideational), while epistemic sense of modals encode the speaker's subjective evaluation of the SoAs, that is, they are speaker-related. In contrast, Hengeveld (1987, 1988, and 1989) believes that the epistemic use of modal auxiliaries can be either subjective or objective, while, similar to Foley and Van Valin (1984), he regards both deontic and dynamic uses of the modals as objective (content-related).

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[4]   We will later argue that those deontic uses that perform an ideational function are, in fact, dynamic in nature (cf. Verstraete 2001).

Palmer, rather cautiously, claims that "epistemic modality in language is *usually*, perhaps *always*, subjective" (1990: 7, italics mine), since "the epistemic judgment rests with the speaker", that is, it is speaker-related (1990: 51). From a more cross-linguistic and typological perspective, Palmer (2001: 33) holds that all "inferences or conclusions are essentially subjective". To Palmer deontic modals are, also, *usually* subjective (1990: 7). Nevertheless, similar to Coates (1983), he does not deny that there are, still, some objectively used deontic and epistemic modal auxiliaries in English.

Verstraete (2001) takes (modal) performativity, which to her is "taking [current] positions of commitment with respect to the propositional content of the utterance", as the defining component of subjectivity (2001: 1517). In his opinion subjective uses of modal auxiliaries serve an interpersonal function because of their inherent performativity, whereas objective uses have an ideational function due to their non-performative nature. In accord with this line of reasoning, he classifies epistemically and dynamically used modal auxiliaries as subjective and objective, respectively. Following Halliday (1970) and, to some extent, Palmer (1990), he speaks of ability and volition as the only dynamic modal notions. Deontic modality, in his view, can be either subjective (speaker-related) or objective (content-related).[5]

To Huddlestone and Pullum et al. (2002: 173) epistemic and deontic use of English modal auxiliary verbs are "most often" subjective in that they encodes speaker's position towards the factuality or actualization of a proposition. It means that they associate subjectivity with speaker-relatedness. However, they admit that both modality types can "occasionally" receive objective interpretation. To them the 'objectively used' epistemic *must* in (4b) encodes a "strict semantic necessity",[6] while in (4a) subjective *must* expresses the speaker's "confident inference" (2002: 181).

(4)
> a. What has happened to Ed?   B. He *must* have overslept.
> b. If I am older than Ed and Ed is older than Jo, I *must* be older than Jo.

They paraphrase *must* in (4a) as "this is the only explanation *I* can think of", while in (4b) it means "this is the only possibility *there is*" (2002: 181, italics mine).

The distinction they make between subjective and objective *may* is, even, more fine-grained than that of *must*. To them epistemic *may* is "most often" employed subjectively and gets the interpretation "*I* don't know that the proposition is false and put it forward as a possibility", whereas it receives an objective interpretation where the evaluation it encodes "is a matter of public knowledge" (2002: 181,

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[5]   We will later argue that the cases he views as 'objective deontic modality' (e.g., ex. 18) are in fact dynamic modal notions.

[6]   Notice, similar to Coates (1983), what they view as 'objective' epistemic modality is, actually, alethic modality.

italics mine) rather the speaker's personal evaluation of SoAs. In their conception of the matter, deontic evaluations expressed by *may* and *must* are, also, "prototypically" subjective because it is typically the speaker who is the "deontic source" for granting a permission or laying an obligation. However, they observe that 'objective' deontic readings are also possible, especially where the deontic source is something as general as "rules and regulations".[7] They hold that, like *may* and *must*, deontic and epistemic readings of *should* are "usually" subjective because it is the speaker who is the source of deontic and epistemic expectation (2002: 186).

To Collins (2007, 2009) subjectivity means speaker-relatedness. For example, he observes that epistemic *may* "usually" encodes subjectivity in that it signals "the speaker's lack of knowledge as to whether or not the proposition is true, and assessment of it as merely a possibility". However, he admits that there are, also, some "occasional" objective uses in the contexts where "the judgement is one that is entertained more generally and not limited to the speaker" (2007: 478; also, 2009: 92).[8] To him deontic reading of the modal auxiliaries are "prototypically" subjective (2007: 486). Similarly, deontic *should* can be either subjective or objective, while its epistemic *should* is most often subjective and only occasionally objective (2009: 45). Epistemic *will* is also "predominantly" subjective, but he speaks of some "occasional" objective uses, too (2009: 127).

Similar to Coates (1983) and Verstraete (2001), Salkie (2009) primarily associates subjectivity with performativity. However, in order to tackle the criticism raised by Narrog (2005) against the usefulness of subjectivity as the defining feature of all central members of modality domain, he introduces two further components to make subjectivity a more exact category. Thus, to Salkie subjectivity is composed of three components: (a) performativity, (b) involvement with primary pragmatic processes (more specifically, pragmatic saturation which refers to the process of identifying the speaker as the source of a modal evaluation) and (c) existence of a clear division between the modality notion and propositional content in an utterance. For example, to him the ability sense of *can* (a notion almost universally accepted as dynamic) lacks all three components of subjectivity: it is neither performative (it does not encode the speaker's here-and-now commitment) nor does it require the contextual identification of the speaker for its interpretation. In addition, no clear boundary can be established between the notion of ability and the rest of the proposition (2009: 85), since they both contribute to the ideational functional component of language rather than the interpersonal component of language in Halliday's sense. To Salkie epistemic

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[7] There is some similarity between their conception of objective epistemic and deontic modality expressed by *may*, *must,* and *should* as a "matter of public knowledge" or "rules and regulations" and Nuyts' (2001a and b) view of (inter)subjectivity (see section 3.1).

[8] Again, one can see some similarity between his view of objective modality as a more general (rather than speaker's personal) evaluation and Nuyts' (2001a and b) view of intersubjectivity (see section 3.1).

uses of English modal auxiliaries are all subjective because they enjoy all three elements of subjectivity.

Table 1. Four relatively different views on the link between modality type and sub/objectivity

		Modality type	**subjectivity**	**objectivity**
1	Foley and Van Valin (1984)	epistemic	√	×
		deontic	×	√
		dynamic	×	√
2	Hengeveld (1987, 1988, 1989)	epistemic	√ (interpersonal)	√ (ideational)
		deontic	×	√
		dynamic	×	√
3	Coates (1983); Palmer (1990); Huddlestone and Pullum et al. (2002); Collins (2007, 2009)	epistemic	√	√
		deontic	√	√
		dynamic	×	√
4	Halliday (1970); Verstraete (2001); Salkie (2009)	epistemic	√	×
		deontic	√	√
		dynamic	×	√

The views of various researchers on the link between the type of modality and expression of sub/objectivity can be roughly divided into four categories (Table 1). The existence of four relatively different views regarding a single category already undermines the validity of establishing such an association in the first place. One obvious limitation of these views is that they have largely focused on the expression of sub/objectivity by modal auxiliary verbs at the expense of the other verbal and non-verbal modal forms such as modal verbs, modal adjective, modal adverbs and mental state predicates. Nonetheless, there are some remarkable commonalities among these views which must be heeded when one is seeking to propose an alternative operational framework for the definition and evaluation of sub/objectivity. To begin with, all these works describe dynamic modality as objective or content-related. Although most works only speak of ability and volition as the dynamic modal notions, care must be taken that circumstantial or neutral possibility/necessity (see Palmer 1987: 102-3) and participant-internal necessity or need, which "refers to a kind of […] necessity internal to a participant engaged in the [SoAs]" (Van der Auwera and Plungian 1998: 80), are dynamic notions. Similar to ability and volition, these three modal notions neither fit into epistemic nor deontic modality categories because they are not person-related. Secondly, all the researchers of group 3 in Table 1 whose views on the matter are largely based on empirical corpus-based investigations agree (more or less) that deontic and epistemic evaluations can be either subjective or objective. In contrast, the views of the researchers in the other three groups (1, 2 and 4) are mostly based on theoretical arguments, assumptions. Finally, the bi-partite distinction that Halliday (1970) makes between the interpersonal and

ideational function of modal notions has more often than not been associated with the expression of sub/objectivity.

2.2. Sub/objectivity as an inherent property of certain modal forms

Unlike those researchers who have (more or less) associated sub/objectivity with the intrinsic morphosyntactic properties of certain modal *types*, there are, admittedly, much fewer works that view sub/objectivity as an inherent property of certain modal *forms* (especially, but not exclusively, modal auxiliaries).

To Timotijevic (2009: 114) subjectivity is a pragmatic feature that exists in certain English modal auxiliaries, but not the others. She argues that 'subjective modal auxiliaries' "crucially involve the speaker and thus involve more pragmatics" than 'objective modal auxiliaries.' More specifically, she claims that interpretation of subjective modal auxiliaries involves *pragmatic saturation,* which is a "primary pragmatic process" in Recanati's (2004) sense. Recanati, also, speaks of "secondary pragmatic processes" such as *free enrichment*. Saturation is a process by which the gap in the semantic profile of semantically incomplete indexical elements such pronouns and modal auxiliary verbs is filled up by contextual information.[9] Free enrichment, in contrast, is a pragmatic process through which the intended meaning of semantically complete items is specified (or enriched) in the context of use. By way of illustration, consider (5). In (5a) pragmatic saturation is required to pragmatically assign a referent to the indexical element *He* in order for the latter to have a complete meaning. In contrast, in (5b) *everybody* is a semantically complete and the sentence is a "(minimally) truth valuable" one (Depraetere 2014: 166) if it is construed as *every single person on the earth is present in the class*. However, this is certainly not what the speaker intended to convey by uttering (5b). (5b), most probably, means *all class members are present*. The pragmatic process that helps the reader arrive at this interpretation is called *free enrichment.*

(5)
> a. He is a businessman. (Who?)
> b. Everybody is present in the class. (Every living person?)

It was Papafragou (2000) who, for the first time, applied the distinction between primary and secondary pragmatic processes to the modality domain. To her *may* and *must* whose semantic domains are "unspecified" require pragmatic saturation in the context of use, while *can* and *should* whose domains are "factual" and "normative", respectively, are freely enriched (2000: 43). Papafragou holds that each of these four central English modals have a single semantic core and, thus, their different or senses in different contexts is due to pragmatics rather than their semantics. Timotijevic subscribes to Papafragou's view of *may* and *must* but

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[9]   See Depraetere (2014) for a fruitful discussion of the matter in the modality domain.

views the domain of *can* and *should* as "potential" and "the normal course of events", respectively (2009: 115-116). She further claims that, unlike *can* and *should,* which are 'objective modals' in that their interpretation requires free enrichment, *may* and *must* are 'subjective modals' since their interpretation requires pragmatic saturation to identify the speaker as the source of the modal judgement.

The association Timotijevic establishes between certain modal auxiliaries and sub/objectivity is essentially similar to that of Larreya and Rivière (1999) in that both works claim that certain modal forms are objective whereas others are subjective. However, unlike Timotijevic, they characterize *should* as inherently subjective. Table 2 presents their classification of English modals.

Table 2. Classification of modal auxiliaries in terms of sub/objectivity

	Modal auxiliaries	**sub/objectivity**
Larreya and Rivière (1999)	may, must, shall, should	subjective
	can, will, have to, ought to	neutral
Timotijevic (2009)	may, must	subjective
	can, should	objective

The idea of associating certain modal forms with either subjectivity or objectivity appears to be even more problematic than linking them with certain modal types. Such an association seems, even, counter-intuitive given the way modals are used in natural language. For instance, seen from Timotijevic's perspective, the necessity expressed by *must* in (6) would be classified as subjective since its interpretation requires pragmatic saturation to attribute the necessity to the speaker (as a source). However, it is obvious that the necessity expressed by *must* in (6) arises from the circumstances (i.e., rules of physics). In fact, we have a case of neutral/circumstantial necessity here. Now the obvious question is: how can we attribute the source of a circumstantial necessity to the speaker? Or how can a circumstantial necessity expressed by *must* be speaker-related or subjective (as Timotijevic claims)? As a matter of fact, Timotijevic's claim regarding the subjectivity of some modals and objectivity of the others faces a serious challenge.

(6)

   But to reach orbit an object *must* accelerate to a speed of about 17,500 miles per hour (28,000 kilometers per hour, […]. (Verstraete 2001: 1508)

Establishing a direct link between certain modal forms and sub/objectivity is not limited to the realm of modal auxiliaries. For example, within the domain of non-verbal modality markers, Lyons (1977), Hengeveld (1989), Verstraete (2001) associate subjectivity and objectivity with modal adjectives and adverbs, respectively. However, such an association was based on the mistaken link they

established between performativity and non-performativity and modal adverbs and adjectives, respectively (see Nuyts 1992).

The works reviewed in sections 2.1 and 2.2 either associate sub/objectivity with certain modal types, or modal forms. The main problem with all these works is the lack of a clear operational definition for the category, on the one hand, and absence of reliable criteria for the distinction, on the other. It is because of these shortcomings that the associations established cannot be applied and used consistently. Furthermore, there is a growing body of evidence that indicates that expression of sub/objectivity has nothing to do with the inherent properties of certain modality forms or types, but rather is a contextual effect (e.g., Lyons, 1995, Traugott and Dasher 2002; Nuyts 2001a and b, 2006, 2012, 2014; Narrog 2012). For example, Traugott and dasher (2002: 98) hold that "[m]ost frequently, an expression is neither subjective nor objective in itself; rather the whole utterance and its context determine the degree of subjectivity". In the same vein, Narrog (2012: 18) holds that it is not possible to determine the subjectivity in an expression based on its morphosyntactic properties alone. He observes that "the categorical identification of specific form classes with specific degrees of subjectivity overall does not seem well supported. […] the same holds for the presumptive categorical association of specific semantic types of modality with subjectivity" (2012: 40). Narrog characterizes such associations as "theoretical preconception[s]" on the part of the researchers (2012: 40).

3. Sub/objectivity as a contextual effect

In the following section we will discuss those major works which do not associate sub/objectivity with certain types or forms of modality, but, instead, speak of multiple contextual factors which realize it in modality sphere and seem to offer more realistic definitions for the category.

3.1. (Inter)subjectivity as an evidential-like dimension in modal expressions: Nuyts' view

Nuyts (1993, 2001a and b, 2006, 2012, 2014) finds the traditional conception of sub/objectivity in the modality domain "intuitive" and "inadequate". He primarily focuses on studying sub/objectivity in epistemic modality domain where it is claimed to inhere (see section 2.1), but later applies his views to the deontic modality, too. Furthermore, unlike most accounts, he does not limit his investigation of sub/objectivity to the modal auxiliaries and studies the former across four cross-linguistically common modal forms, viz. *modal auxiliary verbs, mental state predicates, predicative adjectives* and *modal adverbs*. Nuyts offers two distinct accounts of subjectivity (as a cover term): subjectivity vs. objectivity and subjectivity vs. intersubjectivity.

3.1.1. Subjectivity vs. objectivity: a quality (of evidence)-based view

In contrast with Lyons (1977) who maintains that subjective epistemic modality is the expression of speaker's pure guess, Nuyts (1993, 2001 a and b) argues, rather convincingly, that no epistemic evaluation can ever be totally ungrounded, that is, some evidence is always required to make an epistemic evaluation. Furthermore, he argues that one cannot simply judge the chances of a SoAs being the case or not without having any evidence. In Nuyts view, the only evaluation in a situation where one has no evidence for the truth or falsity of a proposition would be a categorical statement *I don't know p* (Nuyts 1993: 945-46; 2001a: 34; 2001b: 386). Thus, he redefines Lyons' traditional conception of sub/objectivity in the epistemic sphere in terms of the quality of evidence available to the evaluator, that is, sub/objectivity is an evidential-like dimension defined as follows:

> an epistemic evaluation based on better (more reliable) evidence would probably be experienced as being 'objective', while one based on shaky evidence would rather be considered more 'subjective'. (Nuyts 2001b: 386)

3.1.2 Subjectivity vs. intersubjectivity: a (co)responsibility-based view

From a totally functional perspective, Nuyts (2001a and b, 2012, 2014) proposes another alternative view for sub/objectivity, this time, in terms of what a speaker does when he expresses his evaluation of SoAs. This newer conception of sub/objectivity does not have anything to do with the of quality of evidence accessible to the speaker for making a modal evaluation, but rather the matter is "who is 'responsible' for the modal evaluation, as seen from the perspective of the 'subject' or 'source' of that evaluation" (Nuyts 2012: 57). Nuyts employs the terms *subjectivity* and *intersubjectivity* (or *(inter)subjectivity*) rather than *sub/objectivity* for this (co)responsibility-based view. The source of evaluation or what Nuyts (2012) calls *assessor* is, by default, always responsible for making the modal evaluation but the question is whether he considers other people as coresponsible as well (2012: 57). Intersubjectivity, thus, always has the notion of subjectivity embedded within itself, both formally and conceptually. In this (co)responsibility-based view, an epistemic evaluation is viewed as subjective whenever the assessor signals that "he alone knows (or has access to) the evidence and draws conclusions from it", while an intersubjective judgement concerns assessor's "indication that the evidence is known to (or accessible by) a larger group of people who share the same conclusion based on it" (Nuyts 2014: 16).

Nuyts maintains that both quality (of evidence) and (co)responsibility-based views of subjectivity dimension in the modality domain are compatible with each other and can account for the extra evidential-like dimension interacting with modal evaluations. Nevertheless, he prefers his (co)responsibility-based view over quality-based view on some convincing grounds. Firstly, he finds the (co)responsibility-based view more in line with his corpus observations and the way modal evaluation is realized in real use of language (2001b: 394-395).

Secondly, this view seems to offer a more realistic account of the category under investigation (2012: 58). Thirdly, the (co)responsibility-based view is capable of accounting for (inter)subjectivity in both epistemic and deontic modality domain: having weak or strong evidence for a deontic (or moral) evaluation (i.e., a quality-based account) does not make sense, whereas a deontic evaluation may be related to the assessor or a larger community of morally responsible people. For example, permission can be issued by the assessor alone as the only deontic source, or can be granted by a larger group of people including the assessor. Finally, Nuyts argues that languages offer specific evidentiality devices to expresses the quality evidence related to the evaluations. For instance, in English, the evidential adverbs *seemingly*, *apparently*, and *clearly* encode various types of quality of evidence available for making an modal evaluation (2012: 60-61)

Unlike some researchers (e.g., Verstraete 2001; Narrog: 2012), to Nuyts performativity is not the defining feature of subjectivity, but rather is an independent category along with it notional counterpart *descriptivity*. According to Nuyts, in the epistemic realm, descriptive evaluations "report an epistemic qualification of a [SoAs] without involving speaker commitment to it at the moment of speaking", whereas those performative evaluations signal his/her commitment to what he says at the speaking time (2001a: 39). Nuyts rightly states that "[b]oth subjective [...] and intersubjective [...] modal expressions can be either performative or descriptive, and vice versa. (2012: 58)". By way of illustration, consider (7) in which the matrix clause contains a performative epistemic evaluation encoded by *sure* to which the speaker (and the assessor (*I*)) is fully committed at the moment of speaking, while the embedded clause holds a descriptive epistemic evaluation that belongs to the addressee (*you*) but reported by the speaker/assessor. Both modal evaluations, however, are subjective as it is indicated that they belong only to their respective assessors (*I* and *you*).

(7)

> *I* am pretty <u>sure</u> that *you* are entirely <u>sure</u> that I am solely responsible for this vicious plot.

There is some similarity between Nuyts' (co)responsibility-based view of (inter)subjectivity and Papafragou's (2006) conception of the distinction. To the latter, an epistemic qualification is subjective if the speaker is the only member of the group of knowers and the epistemic evaluation is based on his "private beliefs", while it is objective if there is a larger community of knowers (2006: 1694). In addition, to Papafragou the major difference between subjective and objective epistemic qualifications is that the former "is *indexical* in a sense that the possible worlds in the conversational background are restricted to what the *current* speaker knows *as of the time of utterance*", while in objective uses "the conversational background includes what is generally known to some community, or, in other words, what the publicly available evidence is" (2006: 1695). In Papafragou's view, subjective epistemic modality is tied to moment of speaking,

whereas objective epistemic modality can *also* be employed to encode past and future evaluations (2006: 1695). For instance, she regards the modal evaluations expressed by epistemic modal adjectives (*certain* and *possible*) in (8) as objective because they encode past evaluations of SoAs.

(8)

> a. Until Copernicus, it *was certain* that the Earth was the center of the universe.
> b. Yesterday it *was possible* that the stock market would go up today. (2006:1965, emphasis added)

However, Nuyts would describe the evaluations in (8a) and (8b) as intersubjective regardless of their past time reference because the epistemic evaluations expressed were shared among a large community of people. The shared status of the past epistemic evaluation is more obvious in (8a) than (8b).

To Nuyts (inter)subjectivity stemming from other contextual factors such as syntactic patterns embedding the modality markers, linguistic elements present in the current or preceding discourse and general world knowledge (e.g., 2001a: 65-66). Regarding the role of the embedding syntactic patterns in the expression of (inter)subjectivity, Nuyts explains that (inter) it can only be indirectly due to the intrinsic properties of a modality marker, since it is the modal element which "triggers these syntactic conditions", after all (2012: 59). Seemingly, it is the active role modal forms play in selecting their own embedding syntactic pattern(s) that has led some researchers (see section 2.2) to associate specific modal forms with either subjectivity or objectivity.

3.2. Portner's view of subjectivity

Portner (2009) basically endorses both Nuyts' quality (of evidence) and responsibility-based views, but, unlike him, he does not prefer the latter view over the former. He observes that Nuyts has neglected the sensitivity of modal evaluations to two contextual information sources (i.e., the modal base and ordering source), which were introduced by Kratzer (1977, 1991, 2012). To Portner one does not have to choose between the two views as both can account for the actual use of modality markers. He explains that modal base, which is the matter of access to knowledge, can be either the speaker's personal knowledge or shared knowledge of a larger group of knowers encompassing the speaker. This argument leads Portner to make a distinction between subjectivity[MB] and intersubjectivity[MB] ([MB] standing for *modal base*), that is, modal base subjectivity vs. modal base intersubjectivity. The ordering source of epistemic expressions, in turn, "brings in other considerations besides what is firmly known, including the speaker's beliefs and stereotypical expectations" (2009: 165). Naturally, such beliefs can be evaluated in terms of how reliable they are. This roughly parallels

Nuyts' quality-based view and leads to the distinction Portner makes between subjectivity[OS] vs. objectivity[OS] ([OS] standing for ordering source).

Portner claims that subjectivity[MB] is "a categorical concept", that is, a modal evaluation is intersubjective[MB] "if it is based on shared knowledge within a relevant group; otherwise, it is subjective [MB]". Conversely, sub/objectivity[OS] is a "scalar" notion, that is, a modal evaluation can be more or less subjective[OS] depending on the quality of evidence accessible to the speaker (2009: 165). For example, to Portner the epistemic evaluation expressed by *must* in (9) would be intersubjective[MB], because the evidence for it does certainly not stem from the speaker's private knowledge, but from some generally shared/accessible knowledge (*in the view of what is publically known, he must be in the UN General Assembly today*). In addition, as far as the sub/objectivity[OS] is concerned, the evaluation expressed by *must* is objective[OS] in that the quality of evidence is, probably, very high. Thus, the epistemic evaluation expressed by *must* in (9) is intersubjective[MB] and objective[OS].

(9)

> The president *must* be in the UN General Assembly today.

Portner's view seems to have some limitations. Firstly, (inter)subjectivity[MB] is not a totally categorical concept because an (epistemic or deontic) evaluation can, for example, be that of the evaluator alone, or be shared between the evaluator and his friends, evaluator and the people living in his city or, even, evaluator and the people of the world. Thus, (inter)subjectivity[MB.]is better seen as a cline. Furthermore, as Nuyts (2012: 61) explains languages have certain evidentiality markers to express the type and quality of evidence evaluable for making modal evaluations.

3.3. Narrog's view of sub/objectivity

Narrog (2012) employs *performativity* and *evidentiality* to account for subjectivity dimension. Like some other researchers (most notably, Verstraete 2001), to him performativity is the central component of subjectivity. According to Narrog, to the extent that "a linguistic form qualifies a proposition with respect to the current speech situation (including speaker and hearer), it is used performatively," otherwise it is employed descriptively (2012: 42). He defines evidentiality or "interpersonal accessibility" as "the degree to which the evaluation expressed in the modal form (in a specific context) is the speaker's personal evaluation as opposed to communal evaluation or communally accessible knowledge" and

views it as the secondarily important component of subjectivity (2012: 42).[10] Drawing on evidentiality dimension Narrog defines subjectivity as follows:

> If a linguistic form in a specific context expresses a judgment which is based on evidence and/or values that are only accessible to the speaker it is used more subjectively. If [it] is based on [those] that are accessible or shared by a community of speakers it is used less subjectively. (2012: 43)

Both Narrog and Nuyts would regard deontic evaluation expressed by *must* in (10a) as subjective because it encodes a deontic necessity imposed by the speaker (as the only deontic source) on the addressee, while (10b) would be viewed by Narrog and Nuyts as *less subjective* and *intersubjective*, respectively.

(10)
　　　　a. You *must* polish my shoes twice a day.
　　　　b. In this boarding school, you *must* polish your shoes twice a day.

While Narrog's conception of subjectivity (as a scalar dimension) bears a close resemblance to Nuyts' (co)responsibility-based view of (inter)subjectivity, his conception of intersubjectivity is by no means compatible with Nuyts' understanding of the dimension. Regarding intersubjectivity, Narrog (2012) subscribes to Traugott's (2003, 2010) view of intersubjectivity as "hearer orientation" and defines it as encoding the "attention towards the hearer's/addressee's self" (2012: 45). In Narrog's view the intersubjective use of *could*, for example, can be seen in (11) where the speaker's attention to (and respect for) the negative face of the addressee has been signaled via the preterite form of the modal *can*.

(11)
　　　　Could you pass the pepper, please?

According to Narrog (2012: 43), performativity and interpersonal accessibility are realized by three factors. As it can be seen in Table 3, the morphosyntactic properties of a modal form only contribute to its performativity while the other two (contextual) factors are related to the expression of performativity as well as interpersonal accessibility (2012: 43).

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[10]　Narrog claims that Nuyts' (co)-responsibility-based view is "too specific" in that it is limited to the epistemic domain and "may be difficult to apply to deontic and other modalities" (2012: 41), but Nuyts (2012) has unproblematically applied his view to deontic modality.

Table 3. Factors realizing performativity and evidentiality in modal evaluations (Narrog 2012: 44)

factors	contributes to
Inherent morphosyntactic properties of a modal	Performativity only
The actual use of a modal form in a specific syntactic construction	Performativity and interpersonal accessibility
Discourse and extra-linguistic context	Performativity and interpersonal accessibility

4. A more explicit framework for evaluation of objectivity and (inter)subjectivity in modality domain

Two basic questions must be answered in every functional account of the general category of modal subjectivity (employed as a cover term to include both objectivity and (inter)subjectivity) if it aspires to be adequate: what is the (functional) definition of subjectivity? And what factors realize it? The next two sections will address these questions.

4.1. The functional definition of objectivity and (inter)subjectivity in the modality domain

It seems very reasonable to divide the modality domain into two broad categories in accordance with the two main metafunctions of language (i.e., ideational vs. interpersonal in Halliday's (1970, 2004) sense). More specifically, we propose separating dynamic from non-dynamic (i.e., deontic and epistemic) modality and treating them independently when evaluating the subjectivity of the modal notions since, crucially, these two modal categories contribute to different functions of language and are, thus, in need of different characterization. The division we are proposing between these three traditional types of modality (i.e., dynamic, epistemic and deontic) has some support in the literature. Most notably, Nuyts (2005: 13) argues that epistemic and deontic modality are closer to each other than deontic and dynamic modality despite the unfortunate fact that they are often linked together under various labels such as *agent-oriented* (e.g., Bybee et al. 1994), *event* (Palmer 2001), or *root* (e.g., Coates, 1983) modality. To Nuyts (2005: 13), like epistemic modality, deontic modality is totally speaker-oriented as it has to do with the expression of speaker's deontic (mainly moral) assessment of SoAs, while dynamic modality is, in contrast, "first-argument-participant-oriented". Thus, from Halliday's systemic functional perspective, dynamic modal notions, which will be further specified and subcategorized below, are content-oriented and contribute to the ideational functional component of language, whereas epistemic and deontic modal evaluations are speaker (or rather person-

oriented) and serve an interpersonal function.[11] Furthermore, we propose making a three-partite distinction within the general category of subjectivity (similar to Narrog 2012; Nuyts 2001a and b, 2012, 2014), [12] viz. *subjectivity, intersubjectivity,* and *objectivity*. We, also, assume a continuum between subjectivity and intersubjectivity, but take objectivity as a discrete notion (i.e., dynamic modal notions are not 'more or less objective').

In our framework, objectivity characterizes the dynamic modality domain, while (inter)subjectivity is the feature of deontic and epistemic modality. Objectivity can be defined as follows:

> Any modal notion which contributes to the ideational functional component of language via adding something to the propositional content of its embedding utterance is construed objectively.

All dynamic modal notions fall within the scope of this functional definition and would be categorized as objective. However, dynamic modality is not limited to *ability* (or *participant-internal possibility*) and *volition*, which are typically recognized as dynamic modality categories (e.g., Halliday 1970; Palmer 1990; Verstraete 2001; Salkie 2009). *Circumstantial/neutral possibility*, [13] that is, possibility arising from external enabling/disabling circumstances (e.g., *These dirty spots can be removed from the surface by applying a suitable material.*), *circumstantial/neutral necessity* (e.g., ex. 6 above) and *participant-internal necessity* or *need*, that is, necessity having to do with the internal properties of the subject referent (e.g., *These plants must get enough water to survive*.) are also dynamic notions.[14]

There are some fairly strong arguments that lend support to our claim that dynamic modal notions (enumerated above) are inherently objective, content-related and ideational in function. Most importantly, it may be argued that dynamic modal notions encode something which is internal to the SoAs in an utterance, that is, they form *a part of* the propositional content, rather than being *about* it, signaling evaluator's (external) epistemic evaluation of its truth or his moral attitude towards it. Secondly, dynamically modalized utterances are truth-evaluable, that is, they are either true or false given the enabling and disabling circumstances. Epistemically and deontically modalized utterances are, in a stark contrast, not truth-evaluable as such. For example, the circumstantial/neutral possibility expressed by *can* in *It can sometimes rain in this desert* is a possibility

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[11] The term 'person-oriented' is preferable over 'speaker-oriented' because in the descriptive evaluations the evaluator of a deontic or epistemic evaluation is not the speaker. It is only in performative evaluations that the speaker and evaluator are one and the same persons.

[12] However, our conception of the categories does not completely overlap with theirs.

[13] We employ the term 'neutral' (borrowed from Palmer 1987: 102-3) as an alternative to 'circumstantial' to signal that the notion is not speaker/person-related and, thus, serves an ideational function.

[14] The terms participant-internal possibility and participant-internal necessity are the terms used by Van der Auwera and Plungian (1998: 82).

due to the climatic circumstances of the desert in question regardless of the speaker or other person's evaluation. It is due to the truth-evaluable nature of dynamically modalized utterances that some scholars hesitate to classify dynamic modal notions (especially ability or capacity) as modality at all (e.g., Palmer 1986, 1990). Finally, as robustly argued by Salkie (2009), dynamic (or content-related) modal notions lack all three features of subjectivity (or speaker-relatedness), viz. no clear boundary can be established between a dynamic modal notion and the propositional content of a modalized utterance, dynamic modal notions do not require reference to the speaker (or another person) for their interpretation,[15] and they are obviously far from being performative since they have nothing to do with expressing speaker's current commitment to what he says.[16] In addition, almost all **the researchers have characterized dynamic modality with objectivity (see Table 1).**

Based on our view of objectivity dimension, alethic modality would, also, be categorized as objective because it expresses a logical evaluation which forms a part of the truth-evaluable propositional content of a modalized utterance rather than being speaker/person-related. As a matter of fact, there is no obvious difference discernible between *two plus two is four* and (its alethically modalized version) *two plus two must be four*. Furthermore, similar to dynamically modalized utterances, an utterance involving alethic modality is either true or false (i.e., it is truth evaluable).

Epistemic and deontic modality encode the participation of the people in the (speech) events through the reflection of their opinion, comments and attitudes in discourse. Thus, in a marked contrast to dynamic (and alethic) modality, epistemic and deontic evaluations serve an interpersonal (or person-related) function and can be more or less (inter)subjective depending on the number of people involved in making the evaluations. It may further be argued that both deontic and epistemic evaluations have persons (not necessarily the speaker) as their epistemic or deontic source. Even in those cases where the deontic source is a set of rules and regulations, one may argue that a person or a group of persons(s) are behind passing or imposing those rules and regulations. Deontic and epistemic notions can, also, be said to be person-related in that their interpretation in the context requires reference to person(s) as the epistemic or deontic source, that is, the primary pragmatic process of saturation in Recanati's (2004) sense (see Timotijevic 2009).The association of epistemic and deontic modality with objectivity is also something which has already been challenged. For example, Traugott (1989: 36) finds the existence of truly objective epistemic modality questionable and uses the terms 'more or less' or 'weakly or strongly' subjective epistemic modality instead.

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[15] Timotijevic (2009) takes this as the defining feature of 'objective modal auxiliaries' (e.g., can).

[16] However, in our opinion (and in line with Nuyts 2001a) performativity is an independent dimension and should not be confused with (inter)subjectivity.

Therefore, regarding the functional definition of (inter)subjectivity, we subscribe to the views of those who, more or less, associate (inter)subjectivity with the *degree of sharedness* assigned to epistemic/deontic evaluations in modalized utterances (especially, Nuyts 2001a and b, 2012; Narrog 2012; Portner 2009; Papafragou 2006; but, to some extent, also Collins 2007, 2009; Huddlestone and Pullum et al. 2002). [17] In other words, the degree of (inter)subjectivity of epistemic/deontic evaluations depends directly on the number of people sharing it. The terms *subjectivity* and *intersubjectivity* appear to be very appropriate and, more in accord with what is commonly (and philosophically) thought of the notions involved: subjective means an evaluation having to do with only one thinking mind, while intersubjective means an evaluation shared among a group of thinking people. Thus, we define (inter)subjectivity dimension in modal evaluations as follows:

> An epistemic/deontic evaluation is construed as subjective if it is indicated that the evaluation and its evidence/deontic source belong to its evaluator alone (a single-evaluator evaluation). Otherwise, it is construed more or less intersubjectively.

It should be noted that in performative evaluations it is the speaker who is the evaluator, but evaluator is typically (but not necessarily) someone else in descriptive evaluations. In addition, even, the most intersubjective evaluations (i.e., those shared among a very large number of people) cannot be regarded as objective because they are still person-related. Figure 1 schematically presents our conception of objectivity and (inter)subjectivity dimensions in the modality domain.
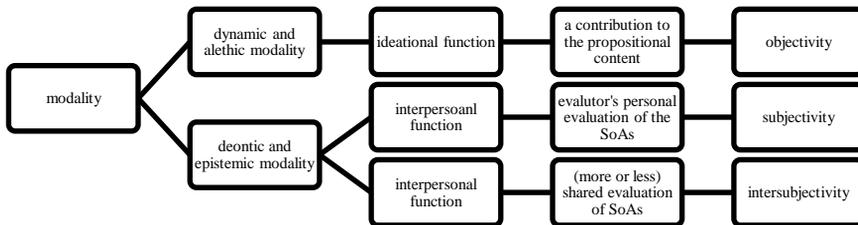

Figure 1. Objectivity and (inter)subjectivity in the modality domain

Performativity has no place in our conception of (inter)subjectivity dimension and the way it is evaluated in the deontic and epistemic modality domains (cf. Coates 1983; Palmer 1990; Verstraete 2001; Salkie 2009; Narrog 2012), because not only performative evaluations but also descriptive ones involve (inter)subjectivity dimension. The crucial difference between performative and descriptive modal evaluations is that in the latter the speaker basically reports another evaluator's

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[17]   There are fundamental differences among the views of these researchers (see section 2 and 3), but they all share a common core: shared vs. non-shared evaluation.

(and sometimes his own) epistemic or deontic evaluation of the SoAs rather than performatively doing the evaluation at the moment of speaking. As a matter of fact, reporting or describing one's own or someone else's subjective or intersubjective evaluation can by no means influence the degree of its (inter)subjectivity from its evaluator's perspective. However, we are by no means suggesting that performativity is not an important dimension in epistemic and deontic modal evaluations (see Lyons 1977; Verstraete 2001). Performativity is simply independent from (inter)subjectivity. By way of illustration, compare *I think you may be mistaken* (involving the speaker's subjective here-and-now evaluation of a certain SoAs, which is performative) with *I thought you might be mistaken* (expressing, again, the speaker's subjective but, this time, descriptive epistemic evaluation of SoAs). The epistemic evaluations expressed by *think* and *thought* in these sentences are both construed subjectively regardless of their performativity status. In these sentences the presence of the first person subject (*I*) in the immediate linguistic context lends an undeniable subjectivity to epistemic evaluations expressed by the modality markers. We will speak of the factors realizing (inter)subjectivity in the epistemic and deontic domains in the next section. It appears that it is taking performativity as the defining feature of subjectivity that has led some scholars to regard descriptive epistemic and deontic evaluations as 'objective' (e.g., Papafragou 2006: 1965, example (8) above).

4.2. How is inter(subjectivity) realized in deontic and epistemic domains?

As we argued in the previous section, dynamic modal notions are inherently objective, but realization of (inter)subjectivity in deontic and dynamic domains is a far more complex issue. Four factors have been proposed in the modality literature to realize subjectivity within the sphere of the deontic and epistemic modality, at least in written language, (most notably, Nuyts 2001a and b, 2012; Narrog 2012): the inherent properties of modality markers, syntactic patterns embedding modality markers, and the linguistic and extralinguistic context within which modality markers are employed.

Inherent morphosyntactic properties of epistemic and deontic modality markers are only related to the expression of performativity dimension (see Narrog 2012: 44; Verstraete 2001) and have, thus, nothing to do with signaling the degree of (inter)subjectivity of modal evaluations. In a sharp contrast, embedding syntactic patterns of certain (but not all) epistemic and deontic modal forms do actively signal (inter)subjectivity status of the modal evaluations expressed. For instance, in (12) the passive and impersonal structures signal that the (descriptive) epistemic evaluations expressed by *think* and *possible* are both intersubjective, that is, they are shared by a larger community of the people than the evaluator alone (see Nuyts (2001a) for an extensive discussion).

(12)

      It was *thought/possible* that the current president would be reelected in the next term.

In the same vein, linguistic and extralinguistic contexts both bear a remarkable potential for indicating the degree of sharedness or (inter)subjectivity of (deontic and epistemic) modal evaluations. As far as the linguistic context is concerned, the presence of (inter)subjectivity-expressing elements in the immediate or wider linguistic context can directly signal the (inter)subjectivity status of a modal evaluation. For example, the presence of the first person pronouns (e.g., *I, us, we, our, my*, etc.) in the linguistic context of a modality marker is one of the main explicit indicators of subjectivity of the modal evaluations. By extralinguistic context we mean the general world knowledge accessible to the language users (or linguists for that matter) concerning the SoAs which can help determine the degree of (inter)subjectivity of a modal evaluation. The three contextual factors involved in the expression of (inter)subjectivity in deontic and epistemic domains are schematically presented in Figure 2**.**
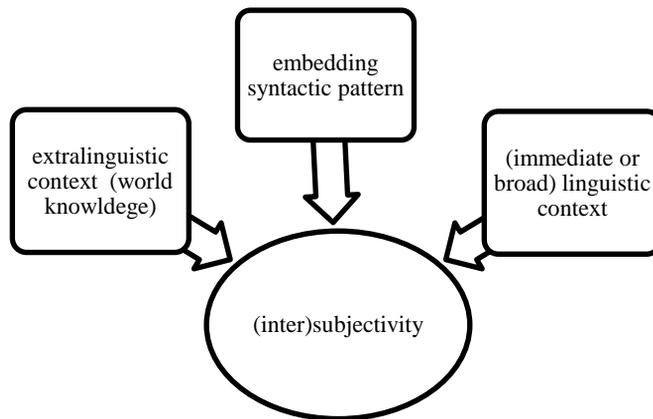
Figure 2. Contextual factors involved in the expression of (inter)subjectivity
in the non-dynamic sphere

It must be noted that the three contextual factors in Figure 2 can either work in isolation or chorus to express the degree of (inter)subjectivity of modal evaluations. In fact, the more information one can obtain from these three factors, the more reliable would be the evaluation of degree of (inter)subjectivity he makes. However, care must be taken that, unlike objectivity, (inter)subjectivity is not a categorical concept with two extreme poles (i.e., subjectivity and intersubjectivity), but rather it is as a scalar concept. In fact, the larger the group of the people or knowers indicated as sharing a certain epistemic or deontic evaluation via these three contextual factors, the higher would be the degree of

intersubjectivity of an epistemic or deontic modal evaluation. To sum up, we can operationally define (inter)subjectivity as follows:

> an epistemic or deontic evaluation expressed by a modal form is construed as subjective if it is signaled, through either its embedding syntactic pattern, (immediate or broad) linguistic context, its extralinguistic context or a combination of these contextual factors, that the evaluation and its evidence/deontic source belong to its evaluator alone, otherwise it receives a more or less intersubjective interpretation depending on the number of people indicated as sharing the evaluation.

In the everyday use of language, almost always, at least, one of the three contextual factors in Figure 2 signals the (inter)subjectivity status of a modal evaluation. In other words, one of these contextual factors is both necessary and sufficient for signaling the degree of (inter)subjectivity of a deontic or epistemic modal evaluation. However, presence of more than one contextual factors can considerably reinforce the expression of (inter)subjectivity and lead to a more reliable evaluation on the part of a linguist. Thus, when one sets out to evaluate the degree of (inter)subjectivity of a modal evaluation, the first (and probably the easiest) step is to find clues for its realization in the syntactic pattern embedding it (or rather the pattern it has chosen to appear in). If no clues are found in its syntactic pattern, then one needs to move on to investigate the (immediate and wider) linguistic context of a modal form to find (inter)subjectivity-encoding elements. Finally, if no (inter)subjectivity-expressing elements could be identified in the linguistic context, one has to resort to the extralinguistic context (or general world knowledge) to determine the degree of (inter)subjectivity. Admittedly, finding extralinguistic clues for the degree of (inter)subjectivity of an evaluation is not an easy task, especially if one is not among the target addressees of a modalized utterance and/or does not have the relevant extralinguistic information. However, we did not come across any modal evaluations whose relative degree of (inter)subjectivity could not be determined via, at least, one of the three contextual factors. To sum up, it may be tentatively claimed that the most reliable factor for evaluating the degree of (inter)subjectivity of a modal evaluation is the embedding syntactic pattern of the modal form that encodes it. This is followed by (immediate or broad) linguistic context and (finally) the extralinguistic context of a modal form (Figure 3). However, further substantiation of this claim (or hypothesis) is in need of a separate qualitative study involving interviews with language users to ask them about the ways they evaluate the degree of (inter)subjectivity of modal evaluations they read or hear.

embedding syntactic pattern	linguistic context	extralinguistic context
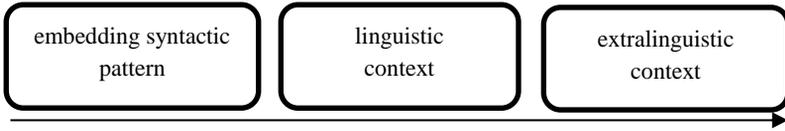
Figure 3. Relative reliability of the factors involved in the evaluation of (inter)subjectivity

Despite its supposedly lower reliability for evaluating the degree of (inter)subjectivity of deontic and epistemic evaluations, extralinguistic context can, at times, be a very reliable contextual factor for evaluating the exact degree of (inter)subjectivity if one happens to have enough world knowledge about the SoAs being evaluated. In such a situation one may, even, be able to say exactly how (inter)subjective a modal evaluation is. For instance, it is certainly much easier for a Translation Studies scholar to determine the degree of (inter)subjectivity of the epistemic evaluation made in (13) than a biologist or chemist. A Translation Studies scholar would interpret the epistemic evaluation expressed by the harmonic combination *must certainly* as intersubjective in (13) since he is well aware that there is a group of researchers who subscribe to this view and the evidence for it is shared among them.

(13)

      Cultural filtering *must certainly* have an impact on the outcome of a translation done from a socio-politically dominant language into a much weaker one.

Although extralinguistic context is, probably, the least reliable factor in evaluating the degree of (inter)subjectivity of modal evaluations, it can at times be the only contextual factor available for an analyst or language user for such an evaluation. In addition, it can always collaborate in indicating the (inter)subjectivity status of a modal evaluation, that is, one can hardly argue that extralinguistic context does not contribute to the indication of (inter)subjectivity where the other more tangible contextual factors are already present. [18]

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[18] One of the reviewers commented that the operational system proposed for evaluation of (inter)subjectivity in the paper "appears to be subject to uncertainty just like the proposals reviewed above". We believe that our proposal can be subject to a comparatively lower degree of uncertainty due to the more explicit and operational definitions we have offered for the dimensions involved, the presence of three (rather one) contextual factors, discarding performativity as the defining component of subjectivity and the distinction we made between dynamic and non-dynamic modality. As far as the contextual factors are concerned, the embedding syntactic pattern and linguistic context of modality markers are fairly reliable contextual factors for the realization (and for that matter evaluation) of degree of (inter)subjectivity. Extralinguistic context may not be as reliable as the other two in evaluating the degree of (inter)subjectivity assigned to the modal evaluations, but it is, fortunately, only one of the three contextual factors involved. Nevertheless, it is not advisable to discard

Our proposed operational framework has some merits over the other contextual proposals for the definition and evaluation of general category of subjectivity. Most importantly, it offers a comparatively more explicit framework for the evaluation of subjectivity based on the clear functional-operational definitions of all three notions involved. Especially, objectivity has not received a proper operational definition of its own in the existing accounts and has always been relegated to position of the 'opposite notional counterpart of subjectivity.' In our view, objectivity is seen as an independent dimension characterizing only dynamic modality domain. Thus, we propose doing away with notions such as 'objective deontic' or 'objective epistemic' evaluations for good. Secondly, the framework is not meant to be used for the evaluation of only certain modal forms (e.g., modal auxiliary verbs) and types (deontic and epistemic) but rather seeks to account for subjectivity across a wider range of modal forms and types. Unlike most of the existing accounts, we do not limit dynamic modality to ability and volition and regard the three other dynamic notions (i.e., circumstantial/neutral possibility/necessity and participant-external necessity or need) as objective, too. Dynamic modality, in general, and these three subcategories, in particular, have often been neglected in the other contextual proposals (e.g., Nuyts 2001a and b, 2012, 2014; Salkie 2009; Narrog 2012) Thirdly, we established a conceptual link between dynamic modality, objectivity, content-relatedness, and ideational function of language, on the one hand, and epistemic/deontic modality, (inter)subjectivity, person-relatedness, and involvement with pragmatic saturation and interpersonal function of language, on the other. This is a significant link which has been missing in the contextualist approaches such as those of Nuyts (2001a and b, 2012, 2014) and Narrog (2012). Fourthly, we did away with performativity as the defining feature of (inter)subjectivity. In addition, we determined the status of alethic modality and argued that it is an objective modal category. Nevertheless, we consider our proposal as only one small step ahead in the way of more reliable evaluation of the elusive category of subjectivity.

4.3. Applying the framework

In this section we will analyze a few examples (14 to 23) containing typical modal forms (i.e., modal auxiliaries, modal adverbs, modal predicative adjectives and mental state predicates) and expressing dynamic, epistemic and deontic modal notions in the light of the proposed framework. Our goal is to observe its efficiency in evaluating the objectivity and degree of (inter)subjectivity of the

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extralinguistic context from the proposed operational system due to the fact that it is simply a less reliable factor than the other two. If a language user has the relevant background knowledge, which is usually the case in real life use of language, this factor can play a crucial role in evaluating the degree of (inter)subjectivity of a modal evaluation. From an analyst's point of view, extralinguistic context may be a less helpful factor in comparison with the other two, though.

modal notions these forms and types express. The purpose is not to analyze all the possible modal forms as it is beyond the scope and space of this paper and requires a separate large scale corpus-based investigation.

The epistemic evaluation encoded by *may* in (14) is a descriptive one in that the writer is reporting other researchers' evaluation of a certain SoAs rather than expressing his own hear-and-now (performative) evaluation. [19] The typical syntactic pattern embedding English modal auxiliaries and modal adverbs (i.e., the pattern of the type *X may/might/must p*) does not indicate the degree of (inter)subjectivity of the evaluations these markers express (see Nuyts (2001a) for an extensive treatment of the issue). However, the linguistic context of *may* explicitly shows that the evaluation it encodes is highly intersubjective (i.e., it is an evaluation shared among a (probably) large number of researchers who have access to its relevant evidence): the evaluation is (part of) a *widely held assumption*.

(14)

In a letter to Nature they report that rivers the size of the Thames have been discovered which are moving water hundreds of miles under the ice. The finding challenges the <u>widely held assumption</u> that the lakes evolved in isolated conditions for several millions years and thus <u>may</u> support microbial life that has evolved 'independently.'
(From www.sciencedaily.com/releases/2006/04/060430003843.htm, accessed on 2017/20/2).

Example (15) contains an epistemic evaluation encoded, again, by *may* to which the writer (who is, also, the evaluator) is performatively committed. As usual, the embedding syntactic pattern of *may* neither indicates subjectivity nor intersubjectivity. Unfortunately, the broader linguistic context, does not contain any (inter)subjectivity-expressing elements, either. Then, one (as an analyst or a language user) has to resort to the extralinguistic context (or his general world knowledge) to evaluate the degree of (inter)subjectivity of the epistemic evaluation. In fact, (15) is a researcher's direct quotation regarding the findings of his study conducted within the framework of the show *Who Wants to be Millionaire?*. Thus, the epistemic evaluation and its evidence, most probably, belong to the researcher as the evaluator. The evaluation is based on his observations and personal reasoning. Thus, according to the extralinguistic context we can regard the epistemic evaluation expressed by *may* as subjective or nearer to subjectivity than intersubjectivity pole on the (inter)subjectivity continuum.

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[19] Recall that the descriptivity (or performativity) of the modal evaluations does not affect the degree of their (inter)subjectivity and is simply an independent dimension.

(15)

> "Knowing a precise value for this coefficient will allow economists to understand individual behaviour better. In particular in relation to the take of individual insurance, pensions plans or explaining saving and investment behaviour in general. Furthermore, it <u>may</u> be useful to the government when it decides whether or not to undertake large public projects with uncertain consequences such as the construction of new hospitals, the funding of the education system, or even the decision to go to war." (From http://www.ucl.ac.uk/media/library/millionaire, accessed on 2017/20/2).

In (16) we have two cases of medium strength (performative) epistemic evaluation encoded by *probably* to which the speaker as the evaluator is committed at the moment of speaking. Like modal auxiliary verbs, the typical embedding syntactic pattern that epistemic modal adverbs appear in (i.e., the pattern of the type *x probably/possibly/certainly p*) is neutral in terms of (inter)subjectivity. Fortunately, the linguistic context contains two first person pronouns (*our* and *I*) which explicitly mark the evaluations as subjective, that is, the (performative) epistemic evaluations are indicated to belong to the evaluator (and speaker) alone.

(16)

> <u>Our</u> childhood was <u>probably</u> just like everybody else's. You know, we each got on each other's nerves. And <u>I</u> <u>probably</u> made it a goal to get on her nerves, being a little irritating brother. (From Corpus of Contemporary American English or COCA) [20]

Example (17) contains a (performative) epistemic evaluation expressed by the predicative adjective *certain.* According to Nuyts (2001a: 66-67) an impersonal pattern of the type *It is/is not certain that P* indicates that the evaluation is intersubjective since the copula *be* "categorically asserts" the evaluation (Perkins 1983, 67). In the same vein, the extralinguistic context points to the fact that the evaluation does not belong to the writer alone, but rather it is shared along with its evidence among the relevant community of archeologists. Thus, in (17) the syntactic pattern embedding *certain* and the extralinguistic context work in concord to reinforce each other and signal that the epistemic evaluation is highly intersubjective.

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[20]   Data from this 520-millions-word corpus is available at http://corpus.byu.edu/coca/.

(17)

>First Napatan king to rule over Egypt: the campaign in which he defeated his enemies in Egypt is vividly described in the Egyptian hieroglyphic inscription on a great stela set up at the Amun temple in Gebel Barkal. <u>It is not certain</u> to what extent he controlled all regions of Egypt following this conquest.
>(From http://www.ucl.ac.uk/museums-static/digitalegypt/chronology/ piy.html, accessed at 2017/20/2)

To Verstraete (2001) example (18) includes two 'objective deontic' evaluations because "[t]he necessity expressed by […] *must* […] cannot be assigned to the speaker" (2001: 1508), i.e., it is non-performative. According to our framework, however, the necessity encoded by *must* is regarded as *dynamic objective* (rather than 'deontic objective') because it encodes a circumstantial necessity arising from the external enabling/disabling (physical) conditions not a person-related evaluation. Interestingly enough, Verstraete himself admits that this use of *must* "might perhaps more appropriately be called 'dynamic'" (2001:1508). In fact, the notion expressed by *must* in (18) adds something to the truth-evaluable propositional content of the utterance rather than its interpersonal component. It should be kept in mind that, unlike epistemic or deontic necessity, circumstantial/neutral necessity (as a dynamic notion) can only characterized as objective, not 'more or less objective.'

(18)

>But to reach orbit an object <u>must</u> accelerate to a speed of about 17,500 miles per hour (28,000 kilometers per hour, called satellite speed or orbital velocity) in a horizontal direction; and it <u>must</u> reach an altitude of more than 100 miles (160 kilometers), in order to be clear of the atmosphere.
>(Verstraete 2001: 1508)

In (19) *could* and *would* express the dynamic and, thus, objective modal notions of ability and volition, respectively. In contrast, the (descriptive) deontic necessity encoded by *must* appears to be highly intersubjective. The deontic necessity expressed by *must* is a descriptive one since the writer, who is the first person narrator of the story, is not involved in the necessity imposed (as a deontic source) at all, but rather is the reporter of the events. As it is typically the case with modal auxiliaries, the syntactic pattern embedding *must* does not signal the degree of (inter)subjectivity of the evaluation it encodes. The linguistic context does not contain any (inter)subjectivity-expressing elements, either. Nevertheless, by resorting to general world knowledge one can figure out that the source for the deontic necessity expressed by *must* is a "social or ethical norm" (as Salkie (2009: 84) puts it) or a rather general safety norm. In fact, many people would share the deontic evaluation as almost everyone is well aware that when *dogs are too fierce*, one should know better than leaving his safety for danger. Thus, the deontic

necessity expressed by *must* is shared between the evaluator (i.e., the driver) and a larger community of people. Certainly, the evaluator/the driver is not imposing a deontic necessity by *must*, but rather he is reminding the passengers of a generally safety norm.

(19)

> Sometimes the hills were so steep that, despite our driver's haste, the horses could only go slowly. I wished to get down and walk up them, as we do at home, but the driver would not hear of it. "No, no," he said. "You must not walk here. The dogs are too fierce." (Bram Stoker, Dracula, cited in Salkie 2009: 83)

In (20), like (19), the syntactic pattern and linguistic context leave us clueless as to the degree of (inter)subjectivity of the deontic evaluation expressed by *must*. However, when we resort to the extralinguistic context, the (performative) deontic obligation is readily marked as subjective since this text is part of the *Macmillan English Dictionary for Advanced Learner's* User Guide and it is almost common world knowledge that the producer of a dictionary is the source of the deontic necessities mentioned in the User Guide. In fact, there seems to be neither a motivation nor a necessity to indicate that the dictionary developer shares the deontic evaluation expressed by *must in* (20) with a larger community of people.[21]

(20)

> If you are using Windows® 2000 or Windows® XP, only users in particular groups can install programs. For Windows® 2000, you <u>must</u> be a member of the Administrators group or the Power User group to install the CD. For Windows® XP, you <u>must</u> be a member of the Computer Administrators group to install the CD. (Salkie 2009: 83).

In (21) the passivized mental state predicate (*was thought*) expresses a (descriptive) epistemic evaluation. As far as the expression of (inter)subjectivity is concerned, the passive syntactic structure marks the epistemic judgement as intersubjective, that is, the evaluation (and its supporting evidence) is signaled to belong to a larger number of people than a single epistemic evaluator.

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[21] One of the reviewers commented that "to me, if anything, (20) appears to be more objective than (19)". But, as we have argued, the notion of objectivity exclusively belongs to the realm of dynamic modality as dynamic modal notions contribute to the propositional content of modalized utterances. In contrast, in both (19) and (20) we are dealing with a person-related deontic necessity, which must be analyzed in terms of degree of (inter)subjectivity. Besides, in our framework, objectivity is a discrete (rather than scalar) notion, and we should not speak of 'more or less objective' notions in the dynamic modality sphere.

(21)

>Originally, it <u>was thought</u> that Bok globules would only have a single star and that was it, but multiple star formation may be fairly common. Even so, none of this appears to happen overnight Even the densest Bok globules may take a few million years before they start to contract and form stars. (COCA)

Example (22) is a very illustrative example of collaborative work of the embedding syntax and linguistic context of a modal expression in the evaluation of degree of intersubjectivity. Similar to (21), in (22) the passive structure embedding *think* indicates that the epistemic evaluation is intersubjective. In the same vein, the linguistic context containing the plural first person possessive pronoun (*our*) shows that the judgement expressed by *think* and its relevant evidence has been indicated to belong exclusively to the four authors of the study. Of course, it is clear that the epistemic evaluation expressed in (21) sits higher on the degree of intersubjectivity than the one in (22) on the (inter)subjectivity scale since the latter is shared between only four people, not a large community of knowers.

(22)

>In <u>our</u> study, it <u>was thought</u> that the presence of a large timing device might produce similar effects to those of the speeded directions condition. (COCA)

Unlike (21) and (22), *think* in (23) encodes a totally subjective (performative) epistemic evaluation. (23) has to do with the speaker's (and evaluator's) personal teaching experiences. The subjectivity of the evaluation expressed by *think* is undoubtedly, and more than anything else, due to the presence of multiple first person pronouns (*I, me, my* and *myself*) in the surrounding linguistic context.

(23)

>Making <u>myself</u> more aware of kids' needs and coming up with strategies in the classroom is important. <u>I</u> <u>think</u> <u>I</u> offer many chances for students to succeed; <u>my</u> job as a teacher is to make sure that they have gotten the knowledge. RTI encouraged <u>me</u> to assist student learning in small groups and individually. (COCA)

As the analyses of the examples 14 to 23 must have demonstrated, our proposed operational system works well in evaluating the objectivity and degree of (inter)subjectivity of the modal notions expressed by various modal forms and types. In Table 4 we have summarized the results of the analyses. It must be, once again, noted that in all the examples involving deontic and epistemic evaluations extralinguistic context can play a significant role in signaling their degree of (inter)subjectivity if one happens to be among the potential addressees of the

modalized utterances and has the relevant world knowledge. As may be seen in Table 4, almost always, at least, one of the three contextual factors proposed in the framework indicates the relative degree of (inter)subjectivity of the modal evaluations.

Table 4. Summary of the analyzed examples

No	modality marker	form	type	objectivity or (inter)subjectivity?	contextual factor(s) involved
14	may	modal auxiliary	epistemic	intersubjective	linguistic context
15	may	modal auxiliary	epistemic	subjective	extralinguistic context
16	Probably (2)	modal adverb	epistemic	subjective	linguistic context
17	certain	modal adjective	epistemic	intersubjective	syntactic pattern (and extralinguistic context)
18	Must (2)	modal auxiliary	dynamic	objectivity	NA
19	could	modal auxiliary	dynamic	objectivity	NA
	would	modal auxiliary	dynamic	objectivity	NA
	must	modal auxiliary	deontic	intersubjectivity	extralinguistic context
20	Must (2)	modal auxiliary	deontic	subjective	extralinguistic context
21	think	Mental state predicate	epistemic	intersubjective	syntactic pattern
22	think	Mental state predicate	epistemic	intersubjective	syntactic pattern and linguistic context
23	think	Mental state predicate	epistemic	subjective	linguistic context

5. Summary

Having critically reviewed the various (traditional and recent) approaches to the definition and evaluation of subjectivity, we proposed a more explicit and operational framework for its definition and evaluation. Modality domain was divided into two broad categories in terms of the main functions of language in Halliday's sense. It was argued that all dynamic modal notions are content-oriented and serve an ideational function by adding something to the propositional content of modalized utterances, whereas deontic and epistemic modal notions

have an interpersonal or person-related function. Accordingly, we argued that all dynamic modal notions are inherently objective, whereas deontic and epistemic evaluations can be more or less (inter)subjective depending on three contextual factors. We explicitly defined both objectivity and (inter)subjectivity in functional-operational terms. When a modal notion adds something to the propositional content of an utterance it is regarded as objective in our proposed framework. In a marked contrast, (inter)subjectivity is the indication of degree of sharedness of an evaluation and its related evidence or deontic source from the perspective of an evaluator. The dimension of (inter)subjectivity as contextual effect is realized by (at least) one or a combination of three contextual factors: the embedding syntactic pattern, the (inter)subjectivity-encoding item(s) in (immediate or broad) linguistic context and (information retrievable from) extralinguistic context of a modal expression. Performativity is independent from (inter)subjectivity and cannot be taken as the defining component of the latter since not only performative, but also descriptive evaluations can be evaluated in terms of degree of (inter)subjectivity.

The next step in this line of research would be to apply this operational framework to a larger number of English modal evaluations and, also, to evaluations in other languages to observe its validity and cross-linguistic applicability. Furthermore, some qualitative research is needed to shed light on the way language users evaluate objectivity and the degree of (inter)subjectivity of modal evaluations they read or hear in real life situations. Such research can show the extent to which our proposed framework is in line with the way language users evaluate subjectivity. The future research will, also, need to focus on the more fine-grained delineation of the three contextual factors (co)responsible for the realization of (inter)subjectivity, especially the 'extralinguistic context' factor. For one thing, future investigations can focus of identification and categorization of (inter)subjectivity-expressing linguistic elements which (intersubjectivity) in the linguistic context. We believe that further research on the definition and evaluation of subjectivity dimension in modality, in particular, and other linguistic domains, in general, can feed into the ultimate development of speech/writing recognition applications or AI systems which would be capable of recognizing and interpreting the degree of subjectivity of human utterances. However, there appears to be a very long way to go in that direction.

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